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BUREAU OF PLANT INDUSTRY

# WEEKLY STATION REPORTS

OF THE OFFICE OF

# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 2 1925

REPORT FOR WEEK ENDING MAY 2, 1925.

HAVRE:

The past week was favorable for field operations. Cultivating started Tuesday noon following the rains of last week. Seeding began Wednesday morning.

The last three days, with a maximum of nearly 70 degrees, have been very favorable for germination. The first four days of the week were cool, showing a minimum of 28 on the 29th. There were traces of precipitation on the 26th and 27th. The last two days have been windy but not enough to cause serious soil blowing.

All of the small grains on the rotations and variety tests were sown. Grasses and grains seeded on the 15th are nearly through the ground. Some of the winter wheat on fallow may have a fair stand but the remainder of the tillage will probably be very poor due either to winter killing or heavy thistle growth.

Native vegetation, although starting early, has progressed but slowly. Box elders and some of the native cottonwood trees are showing leaf. Native grass has progressed rapidly the past three days but had made practically no growth the week previous.

Grains over this part of the state were seeded very rapidly and under very favorable moisture conditions.

JUDITH BASIN:

The week has been comparatively cool with four nights in which temperature fell below freezing. High winds have prevailed and only a few traces of precipitation were received. The total precipitation for April was 1.72 inches, which is .4 of an inch more than the average.

Winter wheat has made a fair growth but winter killing has proved to be more extensive than was at first estimated. A considerable portion of the wheat, which earlier in the spring appeared as if it would survive, has since died, and it is estimated that at least 50 per cent of the winter wheat in the Judith Basin has been killed out. Wheat on plats B and E of the continuous cropping series have been totally winter killed and that on plats A and F is still in a doubtful condition. A fair stand, ranging from 70 to 95 per cent of perfect, was obtained on all other rotation plats.

All crops have made a good growth. Alfalfa stands about 5 inches high and sweet clover has attained a growth of about 2 inches. Spring wheat, oats and barley on the rotations are up. Practically all the trees and bushes, with the exception of green ash and American elm, are partially in leaf.

Judith Basin, continued:

Field work has consisted of seeding flax on the rotations, sweet clover and grasses on the Forage Crop Project, and the remainder of various varieties of small grain on the Cereal Project. Seeding of a 35-acre field of oats and several small increase fields of barley, wheat and oats were also completed. A number of orchard plantings of plums, apples, grapes and raspberries were made and the second planting in the vegetable garden was completed. Cultivation of crested wheat grass rows and of trees about the buildings and in the shelterbelt experiments is now in progress.

Maximum temperature 69, minimum 25; precipitation, Trace.

HUNTLEY:

Frosts have occurred nearly every night of the past week and the weather as a whole has been unfavorable to crop growth. Rain has threatened every day but the actual precipitation has been limited to light sprinkles too small to measure. Alfalfa and brome grass are beginning to look dry and examination of the annual-crop plats show, in most cases, but very little moisture in the soil.

Field work has consisted of completing the sowing of small grains in the variety test and miscellaneous experiments; plowing and working down the land for corn; cultivating the roads to kill weeds; and completing the fencing of the perennial-crop hog pastures.

Maximum temperature 74, minimum 18; precipitation .04 inch.

SHERIDAN:

The most of the week was cool, with considerable cloudiness and with more wind than is usual in this section. Conditions were quite favorable for field work, but growth of all vegetation was slow. Freezing temperatures were recorded for 6 days during the week. Some fairly hardy vegetation was injured, but grain was not effected.

The month of April averaged about 7 degrees warmer than the average recorded at the station, and 2 degrees warmer than any previous April recorded here. Total precipitation for the month was 5.83 inches. The average for the month at the station is 1.8 inches, and the highest previous record for the month 2.92 inches.

Maximum temperature 69, minimum 24; precipitation .35 inch.

Mandan, continued:

The 10 acres for sweet clover pasture has been worked down and seeded during the week.

Part of the cattle for the grazing experiment were delivered at the pasture on May 1.

Horticulture.

Outdoor crossing of plums, Juneberries, P. tomentosa, and pincherries has been in progress throughout the week. Little or no crossing work will be done with apples and crabs, as most of the flowers of these fruits were killed by a severe frost on the night of April 29. Even small buds of apples were injured, the pistils often being killed while other parts of the flower or bud remained apparently uninjured. Early blooming varieties of plums were also damaged by the frost.

The renovating and patching of the lawns, spading of tree and shrubbery groups, and removal of litter, was continued on the grounds surrounding the station buildings.

One large group of conifers was planted on the south side of the entrance gates, and a smaller shrubbery group on the campus proper.

Ribes odoratum, Spirea arguta, and Sambucus racemosa, are at present in bloom.

Routine work in the greenhouse has been continued, and other indoor work, as preparing sweet corn selections, cutting potatoes, and similar work, has been carried on.

Arboriculture.

Forty-six thousand cuttings of Northwest poplar were planted on April 29 and 30. The soil moisture conditions were good, so that with ordinary precipitation and temperature, an excellent stand is in prospect. The cuttings were of a somewhat smaller size than in previous years, due to the poor growing conditions of last summer. This may result in trees of smaller size than have usually been grown in the past.

BELLE FOURCHE:

The past week was by far the coldest of the month. Frosts or severe freezes occurred on five of the seven nights. On the night of the 28th the temperature was below freezing for 10 hours, during which time it reached a minimum of 20 degrees. Some frost damage has been experienced, but surprisingly little, considering the severity of the freezes and the advanced stage of the vegetation. The foliage on trees and shrubs is apparently unhurt, and the fruit trees are blossoming freely.

DICKINSON:

Fair, cool weather has continued through the week. A minimum of 20 degrees, registered on a few nights recently, has not damaged plants apparently except to retard the growth of some.

Small grains have improved in appearance, due to a thickening of stands after the rains of last week.

Alfalfa varieties, sweet clover experiments, and field pea varieties were seeded April 28. About 50 lots of alfalfa and sweet clover were seeded in nursery rows April 30. Root crops were planted May 1.

The third date-of-seeding of flax was made on May 1. Both the April 4 and April 16 dates had emerged and were not killed by the low temperature of the past few nights. Plowing for corn was started April 28.
Maximum temperature 65, minimum 20; precipitation for April 1.26 inches.

MANDAN:

Agronomy.

The past week was favorable for field work on all days except one.

Flax was seeded in the alfalfa and sweet clover rotations for the Office of Forage Crop Investigations.

Plowing has been started with the tractor for corn in the feed fields.

The low temperatures recorded the past week have done minor damage to the small grains. A few leaves were frozen. The temperature was below freezing on four nights during the week.

All crops are growing slowly because of lack of moisture. The surface soil is very dry.

About 4,000 ears of seed have been tested to date. The germination is running between 95 and 100 per cent. All seed was well dried before it went into storage last fall.

The total precipitation for April was .94 inch. This is .73 inch below the 50-year average.
Maximum temperature 64, minimum 22; precipitation .25 inch.

Cooperative Grazing Experiment.

Native vegetation is growing very slowly, and is badly in need of rain. It shows signs of drying up in spots.

Bellefourche, continued:

Appearance of the flowers indicates that the stigmas of the apple flowers are dead and that no fruit will be produced by the early blooming trees, but that the plums were not visibly injured. Alfalfa was injured to the extent of killing scattered stalks, but even in the worst damaged portions of the field the percentage of dead stalks is low.

Crops in general were almost at a standstill during the week. Winter rye was the only crop to make any noticeable amount of growth. The rye is now forming straw. The soil in the rye plants is getting dry and the rye will be very short unless rain comes soon. Winter wheat is recovering very slowly from its weakened condition and the stand on most plats will be considerably poorer than was anticipated.

The humidity was exceptionally low during the whole week. Only one small shower of rain fell and this was dried up within a very short time.

The total rainfall for April was 1.53 inches, which is .03 inch above the average. The rainfall for the year to date is 2.25 inches, or .76 inch below normal.

Maximum temperature 72, minimum 20; precipitation .04 inch.

ARCHER:

The weather has been cool and dry with a severe frost occurring during the night of April 28. The temperature dropped to 15 degrees, freezing the leaves of the winter wheat and spring cereals. Leaves of the boxelder trees were nipped.

The winter wheat is jointing but the spring seeded crops are growing rather slowly due to the cold weather. The prairie grasses, while earlier than they have been in 40 years, according to old settlers, have not continued the growth which was made earlier in the season. Rain would be of great value. The dairy cattle were put on grass April 29 and the large ranch holders turned their cattle on grass about the same time. Cattle that were wintered over on the prairies are in good condition.

Work at the station has consisted in plowing and duck-footing land to be seeded this spring and the seeding of increase fields of oats and barley. About 20 acres of land remains to be plowed, 17 of which are in the general field. A new manure spreader was bought during the week and most of the manure which had accumulated during the winter was spread over parts of the general field.

All trees on hand have been planted and potatoes sorted for planting.

Professor W. L. Quayle, of the University of Wyoming, was a station visitor April 30.

Maximum temperature 72, minimum 15; precipitation, Trace.

AKRON:

The variety oats and barley plats were reseeded Monday and Tuesday. The barley was seeded on ground earlier seeded to oats, and the oats on the barley ground to facilitate rogueing.

Apple trees just breaking into leaf were sprayed with arsenate of lead early in the week. Rotation alleys were leveled and cultivated.

More poison bran was scattered. Six hundred pounds of bran has been poisoned and scattered in an attempt to check the depredations of the cut-worms. The poison bran is very effective but we have had only partial success in controlling the worms because of their great numbers and the consequent quickness in which they were able to perpetrate their damage, and because we have had a continuing run of generations as the spring has advanced. It is still possible to find worms not more than a quarter of an inch in length, which apparently have just come up from lower depths. Consequently, plans are being made to scatter poison bran over the corn ground before seeding is done, and again immediately after seeding is done.

Two hundred yellow pine seedlings were set out Thursday, these being used to replace those lost from last spring's planting. The row on the north side of 350 trees showed a survival of 66 per cent.

Considerable time has been found for setting posts around the station for the new fence to be put up later.

A heavy freeze the night of the 24th has apparently destroyed all the fruit. Blossoms were dropping from the plums, and the apples and pears were in full bloom. Cherries were not yet in bloom, but examination reveals that all or a very high percentage of them were destroyed. The temperature was 19 degrees. Ice one-quarter inch thick was formed on the watering tanks.

Of the perennial forage varieties planted last spring, sweet clover alone has attempted to appear in what would have been a full stand. Worms have prevented any vegetation from appearing above the ground, though the ground has been heaved above the plants for the past three weeks. Poison has been on this ground almost continuously but the worms apparently finding plentyof feed under the ground do not come up often.

There has been no moisture of consequence since April 1, and winter wheat and rye are beginning to show yellow in places.

It has been necessary to abandon the increase plats of winter wheat selections, no wheat appearing, and thistles coming in myriads. It was thought this wheat might come out after the rains of the first of April. The sheep rotation fields pastured off by the worms at about the same time have come out nicely.

Maximum temperature 76, minimum 19; precipitation, Trace.

NORTH PLATTE:

A flare-back in temperatures has been experienced during the week. No killing frost has occurred during the entire month of April until the last three days of the month, when temperatures of 25, 21 and 22 degrees on the bench, and 24, 27, and 25 degrees on the table occurred. Trees, shrubs, early gardens, etc. had been forced ahead by the continued warm weather and were thus in a condition to be severely injured by the sudden low temperatures. It is not likely that any fruit has survived.

April precipitation was about normal, but the greater part of this came early in the month and the ground is now becoming quite dry. Winter wheat is making practically no growth and some areas are showing effects of moisture exhaustion.

Corn planting on the D. L. A. project was begun May 1.

COLBY:

The outstanding event of the week was the fact that the temperatures on three nights went below freezing. These were the first freezing temperatures recorded for the month of April. The lowest temperature recorded on the morning of the 29th was 25 degrees. The same temperature was recorded on the morning of the 30th. The temperature on the morning of the 1st of May was 23 degrees. Fruit loss will be practically a total failure, except possibly in the case of a few of the late cherries. Apricots, which were as large as one-half inch in diameter, were all killed. This is also true of peaches. The leaves on many trees were also killed. The tips of the leaves on the spring cereals were nipped back somewhat. Wheat was not quite far enough along, or else was not succulent enough, to show any apparent damage to date. Not many of the larger Russian thistles show frost damage.

Farm work during the week consisted in plowing for corn the plats to be spring plowed and the working of summer fallow plats that go into corn and sorghums. The roads and alleys on the project and on the borders of all experimental fields were hoed and worked during the week. Soil moisture determinations on fall plowing shows that the moisture is well reduced at the present time. This is also more striking when we consider that the precipitation for the year to date is 1.56 inches less than the normal for 38 years. The precipitation for April was 1.44 inches, which is 0.76 inch less than the 38 year normal average. The wind velocity for the month of April averaged 8.8 miles per hour for the 2 ft. anemometer. Evaporation for the month of April was 6.132 inches.

Corn planting is well started in the county. We expect to start planting corn on the D. L. A. project the first of the week. The soil is rather warm for this time of the year in spite of the low temperatures on three nights of the week. Winter wheat is growing, though not so fast this week as during the past three weeks. Oats are thin and have considerable thistles.

Colby, continued:

Some grading has been done this week around the new cottage for the superintendent. Painting of the other buildings on the station is well under way. All the buildings are receiving two coats of white paint.

HAYS:

During the week the temperature has ranged lower than for some time. The maximum for the week was 83, and the minimum, 26. Precipitation amounting to .31 inch occurred on the 28th.

On the morning of April 30 there occurred a heavy killing frost. Lighter frosts occurred on the mornings of April 29 and May 1. The extent of frost damage has not been fully determined. It killed most of the more tender garden crops, the cherry crop, which is the most dependable fruit crop, and perhaps most of the early fruit crops, which are not many in this vicinity. Apples and pears seem to have suffered less. Alfalfa was hit hard, the top growth having been killed. Small grains have wilted considerably.

Winter wheat, except on fallowed ground, had commenced to color near the ground before the frost as if suffering from drought. Since the frost it has wilted so it now has the general appearance of suffering very much from drought, even though there is still some moisture in the surface soil from the recent rains. As stated in a previous report the wheat is thin, and it is getting weedy. It may now also be stated that there is considerable fly in it. These conditions added to the disadvantage of a dry subsoil do not offer much encouragement for a good crop.

The spring small grains have not yet felt the need of more moisture than is available, so these crops, except for the wilting caused by the frost, are looking fine.

It was necessary to reseed brome grass because the first seeding failed to produce a stand.

GARDEN CITY:

Low temperatures have prevailed throughout the past week. On both Tuesday and Wednesday nights killing frosts were recorded. On Tuesday night the temperature went down to 27. This temperature did little damage to crops but was fatal to most fruits in this section. A shower netting .45 of an inch of moisture was received last Sunday night.

Field operations for the week have consisted of lister cultivating the fall listed plats that are to be planted to sorghums, spring plowing, trimming roadways and building fence.

LAMAR:

The past week has been cold, more like March weather than April. The fore part of the week a good rain fell over a strip covering about six miles in width, tapering out at both sides. The heaviest rainfall occurred about a half mile east of the station. On the Country Club grounds, in the sand boxes, there are earthen jars used for holding water to moisten the sand. These jars were empty before the rain and after the rain the water measured two inches in depth. The measurement at the station was .95 inch. It was quite evident that the rainfall was much heavier east of us by the amount of washing and the water which stood on the ground and in ditches.

During the fore part of the week when the fields were too wet for work, the time was spent in running the cement walls in the office basement. As soon as the fields dried off sufficiently, the teams were put to work. The plats were plowed and harrowed for the first date of planting. The entire plat field has been disked and the increase fields are being gone over today. The first date of planting was made on May 1, eight varieties being planted.

The small grains are going to have a slim show this year. The rye on the station plats is coming along as well as could be expected after going through with so much rabbit damage. The plats, since being fenced, are making a much better showing than unprotected areas. Oats are not up to a 3/4 stand yet, but, upon examination, showed to be still germinating.

Fruit that got past March freezes still has chances for a crop. The peach crop is apparently the only one that is cut, over this section. It is understood that the peaches in some localities are still about 100% good.

TUCUMCARI:

Although much of the Southwest has been visited by torrential rains the past two weeks, the greater portion of New Mexico is still suffering from the drought. A snow, measuring 0.21 inch precipitation, fell the past week, but large portions of the county did not receive even this. Aside from a few scattered localities, the winter wheat on the plains south of Tucumcari is largely dead. An unusually heavy row-crop acreage would normally follow, but unless rains are received it is probable a great amount of land will be fallow, worked this summer in time to seed winter wheat.

Satisfactory field work cannot be done at the present time, although the first date of planting plats are being lister planted today. The lister is being run seven to nine inches deep and below the dust and dry lumps we find a small amount of moist soil. Whether this soil at the bottom of the furrow contains enough moisture to germinate a satisfactory stand of sorghums is problematical.

Tucumcari, continued:

Mean temperatures the past three months have been from 4 to 6 degrees above the long-period mean, but due to the drought range grass is still showing little or no signs of growth.

| | Precipitation for Six Months Period. | | | | | | |
|---|---|---|---|---|---|---|---|
| | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | Total |
| 1905-1924 Average | 0.81 | 0.71 | 0.34 | 0.55 | 0.75 | 1.76 | 4.92 inches |
| 1924-1925 | 0.04 | 0.47 | 0.30 | 0.05 | T | 0.38 | 1.24 inches |

Maximum temperature 83, minimum 32; precipitation 0.21 inch. Evaporation 1.653 inches. Wind velocity 6.3 miles per hour.

BIG SPRING:

The rainy weather, which broke the drought last week, has continued this week. .76 inch of rain fell on the night of April 25 and .56 inch on April 29. This makes a total of 4.43 inches for the month, which is more than twice the 25-year average of 2.17 inches.

Because of the wet condition of the soil, little or no field work was done this week until Friday when the lister was started in one of the more sandy fields of the station. Today the section harrow is being used to break the crust on the plowed field before another sand storm gets under way. It was impossible to get the May 1 date of seeding in on time, but it is hoped that the soil will be dry enough to plant within the next day or so.

The cattle feeding tests, which have been conducted here for the past five months, will be closed May 15. On this date a feeders' day meeting will be held when the results will be announced and the tests discussed. The people of this vicinity have shown considerable interest in the feeding work.

Maximum temperature 82, minimum 41; precipitation, 1.32 inches.

LAWTON:

The rains of last week were followed by four days of cool, cloudy, quiet weather. The ground dried very slowly and field work was not possible until Friday afternoon. The spring tooth harrow is being run over all plowed ground to loosen the tightly packed surface soil.

The May 1 date of planting tests with cotton and the sorghums was made on the 2nd. Cotton planted April 15 continues to improve in stand and it is now likely that a fair stand will be secured.

Lawton, continued:

Alfalfa has made only a limited growth since the rains. It is probable that the first cutting will be negligible except on particularly favored spots.

Oats on the rotation plats are about 50% headed. Wheat is just beginning to head. Arbruzzi rye is in full bloom while common rye is just heading.

Sumac and broom corn were seeded on the M. C. plats May 2.

Minimum temperatures of 42 and 43 were recorded during the week, while the maximum temperature has ranged from 60 to 80. Total precipitation for April amounted to 5.35 inches or 2.40 inches above normal.

WOODWARD:

The drought in this section has been broken. We received a rain of about 1.70 inches in less than an hour, with a total of 1.91 inches for that day. We have had over 2.00 inches of rain during the past week, and it was rather general. Wheat is looking much better at present.

Not much field work could be accomplished during the fore part of the week. Grape cuttings were planted. Wheat on most of the rotation field roads has been plowed under. One plat of peanuts has been planted. Some grading of roads has been done. The vineyard has been disked, and ground is being prepared for the planting of corn.

A light frost was reported in places over the country. The minimum temperature at the station was 35, and it is thought that no damage was done in this section.

Maximum temperature 87, minimum 35; precipitation 2.07 inches. Evaporation 1.225 inches. Average hourly wind velocity 5.0 miles per hour.

NOTE:

Department Bulletin No. 1293, "Tillage and Rotation Experiments at Dickinson, Hettinger, and Williston, N. Dak.," by Leroy Moomaw, has just been issued, and the Division of Publications has been requested to forward 24 copies to each of the field stations of this office.

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# WEEKLY STATION REPORTS

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# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 9 1925

REPORT FOR WEEK ENDING MAY 9, 1925.

HAVRE:

The past week was cool and dry. Frost occurred on five nights with an average minimum temperature of 34 degrees. The maximum temperature was 71 on the 3rd with an average maximum of 60.

Vegetative growth was slow. Some of the early seeding came up, but most of the other small grains are very slow. Seeding of oats and barley on the larger fields and the blocks occupied most of the week.

Director F. B. Linfield, of the Montana Experiment Station, was at the station on the 4th. Robert Shotwell, of the Bureau of Entomology, has been at the station a few days on an inspection trip. Mr. N. F. Woodward, of the Office of Forage Crop Investigations, was here for three days attending to the planting of that office.

JUDITH BASIN:

Cold, windy weather has prevailed throughout the week. The temperature has dropped to freezing or below six days out of the seven, and a heavy frost on May 7, when a minimum temperature of 22 was recorded, did some damage to barley. A small amount of barley on rotation fallow plats and all barley on the Forage Crop Project was frozen back to the ground. No injury to other grain crops was apparent. Exceptionally high winds have caused some soil drifting which is a very unusual occurrence at this time of the year.

Field work has been devoted to seeding a number of plats on the Cereal Project and small increase blocks of spring wheat and oats. Land for the corn rate and date of seeding tests, and almost all the corn plats on the rotations in Field A were plowed. All trees including those in the orchard and shelterbelt experiments were cultivated and plowing of fallow land has commenced.

Director F. B. Linfield, of the Montana Experiment Station, visited the station on the 5th and 6th.

Maximum temperature 59, minimum 22; precipitation .10 inch.

HUNTLEY:

The weather has continued cool throughout the past week and crops have made very little growth as a result of this unfavorable condition. In appearance, alfalfa and brome grass pastures have improved with the cooler weather, the effects of drought showing less than was the case a week ago.

Huntley, continued:

Soil samples show the need of rain, before long, to supply crops on all treatments except summer fallow. This method shows available moisture in the first three feet of soil in most of the plats sampled, while on other treatments the moisture is down only 14 to 18 inches.

Hogs were placed on the perennial pastures on May 8. Alfalfa on these plats is about 6 inches high and brome grass has an average height of about 8 inches. Both crops need moisture but have made enough growth to carry the pigs for some time under normal conditions.

Maximum temperature 67, minimum 24; precipitation .22 inch.

SHERIDAN:

Cool weather has prevailed throughout the week. Growth of all vegetation continues slow, but spring grains are stooling well. Both alfalfa and brome apparently show some effect from frost, but none is apparent with any other field crops.

Maximum temperature 69, minimum 24; precipitation .18 inch.

DICKINSON:

Dry, cool weather has continued through the week with frost each night except two.

Corn ground on the rotations and most of the increase blocks was plowed and harrowed. The rotation corn plats are lined up and ready for seeding Monday. Potatoes were planted on Rotations 414 and 415 on May 9.

Plats of wheat, oats, and barley were seeded May 6 with seed treated with copper carbonate, formaldehyde and a commercial mercuric compound "Uspulun" to compare their effectiveness in the control of disease.

A few plats on the Normal School Field to be fallowed this year were worked with the duckfoot to get rid of fanweed which was starting to bloom. On plats fallowed last year this weed is coming in thickly in the grain. On the main field wild buckwheat is coming on fallow as well as other plats.

Early varieties of plum are now in full bloom.

A good many farmers have visited the station during the week. They were usually more interested in the crested wheat grass than any other crop.

Maximum temperature 67, minimum 20; precipitation .06 inch.

MANDAN:

Agronomy.

The past week has been cool with light frost on three nights. There was a slight amount of rain which was of minor value to crops.

The week was favorable for field work. During the week plowing was done for corn varieties, corn breeding block, forage crops, and seed blocks of corn. Plowing has also been continued for corn in the feed fields. Plats have been lined up for trimming.

All crops are making a very slow growth, because of the cool weather and the lack of moisture.

A great deal of breaking is being done over the country for flax. Maximum temperature 69, minimum 25; precipitation .19 inch.

Cooperative Grazing Experiment.

Native vegetation is growing very slowly, and is badly in need of rain. While all vegetation made an early start, growth has been slow.

The cattle for the grazing experiment have all been received, and are now being held on the reserve pasture. A very good bunch of 2-year old grade steers were obtained. The cattle were all branded on May 6, and a few were dehorned. The steers will have several days rest on the reserve pasture between branding and the initial weighings.

Horticulture.

Outdoor crossing work with fruits has been in progress throughout the week. Plums, sandcherries, juneberries, pincherries, Nanking cherries, gooseberries and crab apples, have been used in outdoor crossing work. But few crabs were crossed, as most varieties were severely damaged by frost. Dolgo seems to have withstood frost damage better than other varieties.

Wires have been put up on which to train grapes in the new grape variety test.

The second planting was made in the acre-garden, including corn, potatoes, wrinkled peas, wax beans, and carrots.

Selfed sweet corn ears have been labeled and sacked. Fields for vegetable breeding have been measured and laid out.

The routine work on the grounds and in the greenhouse has been continued.

There has been no yield from the asparagus field this week, due to the repeated freezing back of stalks.

ARDMORE:

The past two weeks have been unusually cold. The temperature was down to 20 on April 29, and freezing temperatures have been recorded almost every night for the past fifteen days. Due to the early spring, crops made more than usual growth early in the season, and there has been considerable damage from frost. Alfalfa has been frozen back several times. Small grain appeared to suffer less than alfalfa. All small fruit buds have been killed.

There has been no precipitation of any consequence. The total precipitation for the month of April was 1.34 inches. The 13-year normal for the same month is 2.27 inches. The greatest amount of precipitation for a 24-hour period since last October has been .33 inch. The only rainfall during May to the present date has been .29 inch on the 8th.

All crops are in bad condition for the lack of moisture. Alfalfa and crested wheat grass have made almost no growth for the past 20 days. The latter crop has begun to fire badly. Small grain is just beginning to show the effects of the drought. Native pastures are at a standstill with very little feed available at this last date.

On the station, corn fields and rotation plats for corn have been prepared for planting, and this work will be done next week.

ARCHER:

The dry spell was broken the afternoon of April 7 with a rain of .47 inch. This was much needed and will do a great deal of good to all branches of agriculture. As yet no frost has occurred since the rain.

All of the wheat, oats and barley have been seeded on the dry-land plats. Sunflowers in the general field and 10 acres of corn in the cereal projects have been seeded. The potatoes are ready to plant. All land except 5 acres of the general field has been plowed.

The winter wheat is showing up very fine and the rain will be of great benefit to it.

Maximum temperature 70, minimum 24; precipitation .48 inch.

AKRON:

The second seeding of forage varieties was made early in the week. Some increase barley where it is desired to have small grain stubble for another year was reseeded. Poison bran was scattered over the corn ground. The sheep rotation corn fields were spring-tooth harrowed the last of the week.

Winter wheat was suffering badly for lack of moisture when observed Tuesday. The continuous cropped plats and the stubbled plats were firing badly.

Akron, continued:

Beginning Thursday the wind has hung steadily in the east. Thursday, Friday and Saturday until noon were foggy and threatening, but up to today there has been recorded but .20 of an inch of rainfall.

Much time was found during the threatening weather for repairing machinery and sorting over grain varieties.

It now appears that there will be a few plums, but it is too early to estimate the covering. The cherry varieties are now in full bloom, but in every instance the germ of the flower appears to be black.

Trees in the forestry planting are coming into leaf in spots, the leafing out not as yet being general. Generally speaking, there has been very light blooming among the apple varieties. The fruit of the apples appears to have all been killed by the low temperature recorded last week.

Mr. E. J. Maynard and Mr. Lynn, graduate students, visited the station during the week in the interest of the Sheep Rotation Experiment.
Maximum temperature 71, minimum 32; precipitation..20 inch.

NORTH PLATTE:

Weather features for the week have been low temperatures, intermittent winds, overcast skies, and finally, near the end of the week, .84 inch of rain. A minimum temperature of 27 degrees was reached, but after the severe freezes, which occurred the last of April, nothing of much importance remained to be damaged.

Corn planting was completed on the D. L. A. project, and progressed on the station fields until stopped by rain on Friday.

Except on fallow, small grains had gone backwards for a week or more preceding the rain. It is not likely, however, that any permanent injury has been done if moisture is plentiful from this time on.

COLBY:

Beginning Wednesday evening and continuing for over 48 hours 1.13 inches of moisture fell. This rain, coming slow and easy as it did, practically all went into the ground. The winter wheat, which was beginning to show the lack of moisture on fall plowing and some stubbling in and on some disk ground, should now be in good condition for some time. This was almost an ideal rain, with cool temperatures, intermittent showers or rather drizzles, and very little run-off. In fact, there was no perceptible run-off. The spring grains which have been rather small should now grow rapidly. On some of the earlier seeding of the winter wheat a few awns are beginning to show. This is only on the earlier seeding which has been well supplied with moisture. The moisture samples, taken the first of the week before the rain, showed that there was scarcely any available moisture in the ground fall worked.

Colby, continued:

The D. L. A. corn plats were seeded on the 4th. On all except two or three plats there was ample moisture to insure germination. The commercial field of corn on the station was mostly all seeded before the rain stopped farming operations. The seed bed on the commercial field was in excellent condition. This field was in winter wheat in 1924 and was fall listed. The furrows were filled during the month of April and the present listing is being done in the old furrows. It will probably be Wednesday of next week before listing can continue on this ground.

The plats to be manured this spring were manured during the first of the week. Some grading was done around the new house and buildings also before the rain. After the rain, which delayed field operations, the time was spent in doing various rainy weather jobs, such as painting stakes and general repairing and fixing of farm buildings.

The fruit was practically all killed by the frosts of the previous week. One peculiar feature of the freezes was that the Russian thistles were not killed except in a very few places.

HAYS:

Fine growing weather has prevailed during the week. It commenced sprinkling rain about six o'clock Thursday morning and from that time to date, (late Saturday evening) the air has been thoroughly saturated with moisture. During that time it has been foggy, misting or sprinkling, but at no time raining hard. The total rainfall for the period has been but .49 inch.

A good stand of alfalfa is now up on the newly seeded plat. Also a fairly good stand of brome grass has resulted from the second seeding. Both alfalfa and brome grass plats look very promising at this time.

Small spring grains are apparently making good recovery from the effects of the frost and making fair growth.

Winter wheat is apparently at a standstill at this writing in spite of favorable growing weather, except for that sown on fallowed ground. On fallowed ground the wheat is now very thick and the growth has reached a height of 24 inches, whereas on other methods it ranges from 4 to 12 inches high and from a very thin stand to a good stand. The difference between the growth of wheat on fallow and on other methods are extremely noticeable this year.

Peas are about 5 inches high and making fairly good recovery from frost damage. Rye is very uneven in both stand and growth. It is now beginning to head, the tallest plants being about 24 inches.

Hays, continued:

Drs. Roemer and Deicke, both from Germany, are, today (Saturday), visiting the station. They have been in the United States only about three weeks. They are making a study of the experiment station work being conducted in this country.

Maximum temperature 86, minimum 34; precipitation .49 inch.

GARDEN CITY:

The sky has been cloudy for the greater part of the past week, and, although rain has threatened on most every day for the past four days, only a small amount of moisture has been received.

Winter wheat on continuously cropped plats was beginning to show the need of moisture, but the shower received revived it again. Wheat on fallow continues to make a rapid growth.

Field operations for the week have consisted of the completion of spring plowing, disking, listing, and spring-tooth harrowing. Most of the plats that are to be planted to row crops this spring are in good shape.

Maximum temperature 87, minimum 40; precipitation .43 inch.

DALHART:

Conditions are very much improved since writing the last report. The past two days have been cloudy, cool and wet. Two rains occurred during the last 24 hours, coming in a slow, easy rain with very little run-off. There was no run-off water from the fields. The total precipitation for the past 24 hours is 1.29 inches.

The plat and increase fields were in the best of condition to receive this rain. The disking of these fields was finished the afternoon before the rain commenced. The teams were kept busy in the fields during the entire week up toand including Thursday. This finished the disking. The rain has hindered field work for the remainder of the week. During the past two days, work has been put forth on the station well which suddenly went to the bad. It had been only about two months since it had been worked on but it soon played out, due to the roughened condition of the cylinder.

Today is the date that two varieties of cotton were to have been seeded. This will have to be delayed until the field dries off sufficiently. It happened that in this section the rain was more in demand than the seeding of cotton, just at this time. The plows will be started just as soon as the fields will permit.

TUCUMCARI:

Four showers the past week have made plowing possible for the first time this spring and two plows have been kept moving steadily. Aside from listing the May 1 date of planting plats, this is the first field work done and it seems evident a portion of the station crops will of necessity be planted late. With favorable weather conditions, Dry Land rotations and M. C. series should all be planted next week.

While light rains were received over most of this locality the past week, very few sections received precipitation totaling over .80 inch. Field work can be done in certain localities and possibly the grass will start growth, but there is little available moisture below the surface foot and the outlook is still very serious. Station records show precipitation the past seven months totals 1.99 inches.

Maximum temperature 88, minimum 45; precipitation .65 inch. Evaporation 1.403 inches. Average hourly wind velocity 6.3 miles per hour.

BIG SPRING:

For the most part weather conditions have been very conducive to farm work. One rain of .36 inch delayed work for a day, but otherwise the delayed plowing and listing have been progressing just as rapidly as the station horse power would permit.

The spring plowed plats in the rotations have been plowed and one field listed. All fallow plats have been disked and the beds in some of the listed plats have been cut down. The May 1 date of seeding was not made until May 4 because the soil was not dry enough until this date. The ground was so cold at the time of planting and the weather has been so cold since that none of the plantings have emerged as yet. However, an examination showed that all sorghums were ready to break through the ground, but the cotton has barely sprouted.

The Early Richmond cherries are starting to ripen, but very few reach the ripe stage before the birds injure them.

Maximum temperature 89, minimum 47; precipitation .46 inch.

LAWTON:

Cool, cloudy weather characterized the past week and terminated in a gently falling rain that totaled 0.75 inch.

The weather is ideal for the growth of small grain crops but such crops were too severely injured during the winter and early spring to make a profitable recovery. Native grasses have made a remarkable response to the favorable weather of the past 15 days, but alfalfa continues to show the effects of injury by drought and grasshoppers.

Lawton, continued:

Corn is yet very small and growth is nearly at a standstill.

Four varieties of cotton planted April 15 finally came up to a stand over a period of 20 days. Cotton planting has been in full force throughout the county for some time but the temperatures are too low for rapid germination and satisfactory subsequent growth.

Grasshoppers continue in numerous quantities in the grass lands but are not feeding much during the cold weather. Some localities report some injury and some poisoning is being done in purely restricted areas. The majority of farmers are prepared to poison extensively as soon as advisable and it is very probable that an extensive poison campaign will be carried on this year.

Mr. J. R. Horton, Federal Entomologist, of Wichita, Kansas, is testing quite extensively several kinds of bait and poison here at the station.

During the week the maximum temperature ranged from 62 to 81, while the minimum temperature varied from 45 to 60. Wind velocity for the period was light and the evaporation low.

WOODWARD:

After the rains finally started, we have been receiving plenty of moisture. We had a total of 3.18 inches of precipitation during April, most of it in the latter part. We have had 1.15 inches in May to date. Some rain has fallen every day for the last four days, consequently, very little field work has been possible during the latter part of the week.

Corn, both rotation and first date of variety test, was planted early in the week; single rows of about 15 varieties were planted. A small variety test of clovers and lespedeza was also planted. Other field work has consisted of plowing roadways, some harrowing and leveling lister ridges.

Considerable work was done excavating the basement for residence on the Dairy Farm.

Practically all of the wheat on D. L. A. plats is headed, and, while rather short, looks better than was expected. On a recent trip east of town, a good many fields of wheat that were noticed were very short; in some of them which were heading, the plants did not appear to be over six inches tall.

A few Chinese elm root cuttings, which were started in the greenhouse, have been transplanted to the nursery, and 700 root cuttings were planted directly into the nursery.

Maximum temperature 89, minimum 49; precipitation 1.15 inches.
Evaporation 1.013 inches. Average hourly wind velocity 5.4 miles per hour.

BELLE FOURCHE:

The whole week was cold and windy with freezing temperatures occurring on most nights. The humidity was unusually low. Crops have shown no visible signs of suffering, but the soil in the winter rye and alfalfa plats is cracking badly.

The continued frosts have almost destroyed the prospects of a fruit crop although some of the late blossoming varieties may set some fruit. The blossom buds on some of the shrubbery is killed, but the foliage shows very little injury.

The corn ground is ready for planting and will be planted the first part of next week. Many farmers have started planting already though the danger of frost after the corn comes up is not over. Very little of the corn on spring plowing in this section will germinate without rain.

Maximum temperature 63, minimum 29; precipitation 0.

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# WEEKLY STATION REPORTS

OF THE OFFICE OF

# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 16 1925

REPORT FOR WEEK ENDING MAY 16, 1925.

HAVRE:

The minimum temperatures for the past week were low, being below freezing three nights. The morning of the 10th the temperature was 23 above, being the lowest recorded for this season of the year in 45 years. Temperatures of the 12th, 13th, and 14th were seasonable and vegetation grew rapidly.

Small grains came up to good stands. Winter rye is starting to joint. Domestic grasses made a rapid growth. Preparation of corn land was completed but not planted.

During the past two weeks, much killing has been noted in the Northwest poplar planting in the shelterbelt due to canker. About one-third of these trees will need to be taken out. No other killing is noted. The freeze of last week injured the Ash leaves which were just emerging.

A 15-30 McCormick-Deering tractor was purchased for commercial field work and was in use preparing corn land during the week.

Mr. M. L. Wilson, formerly of the Montana Extension Service and now with the Bureau of Agricultural Economics, with Mr. J. M. Humphrey, were in this vicinity, on the 15th, inspecting the Fairway Farm located 8 miles south of Rudyard, in the western part of the county. This is one of a number of Fairway farms being operated in Montana on which the large scale method of management is being used. The methods being used are those which are found the most economical as the result of the farm survey conducted by Mr. Wilson two years ago in what is known as the "triangle". This station is located in the "triangle" and we are assisting Mr. Wilson, especially regarding the arrangement of crops and tillage.

JUDITH BASIN:

The greater portion of the week has been comparatively warm, but a couple of cool days were received, followed by nights during which the temperature fell below freezing. An unusually severe frost for this time of year occurred on May 10 when a minimum temperature of 19 was recorded. A light rain of .21 inch on May 14 afforded temporary relief. Very little precipitation has been received for over three weeks, and although none of the crops appear to be suffering to any extent from lack of moisture, a good rain is badly needed. The total precipitation received to date during May has been only .37 inch, whereas the average rainfall for the entire month of May is 2.69 inches. All crops have made a good growth but barley does not have a very healthy color and was apparently injured by a heavy frost during the past two weeks.

Judith Basin, continued:

Field work on the rotations has been devoted chiefly to plowing corn and summer fallow plats, planting corn, reseeding several winter wheat plats to spring wheat and seeding spring wheat on the continuous cropping series. The first planting of corn on the Forage Crop Project was made, and recultivating a 60-acre field to be seeded to pasture, was completed. A 12-acre field was also seeded to alfalfa.

Maximum temperature 73, minimum 19; precipitation .21 inch.

HUNTLEY:

The past week has been marked by extremely changeable weather. Hot, dry days have been succeeded by days in which the temperature has dropped below freezing and generally unfavorable growing conditions have prevailed. Thunder showers have threatened but resulting precipitation has been little more than sprinklings. Moisture is sorely needed to germinate seed planted in dry ground and to sustain crops which have emerged.

Field work has consisted in planting corn, beans, and the Dry-Land Garden. Winter rye seeded in the green manure rotations was finally disked up and the ground prepared for reseeding to spring wheat. Winter rye came through the winter with a much thicker stand than did winter wheat but as the season advanced this stand has dwindled until survival was confined chiefly to marginal rows. The greater part of each plat was becoming extremely weedy with thistles and fan weed. In order to kill the weeds, as well as furnish desirable material for plowing under, cultivation and replanting of these plats was resorted to.

Maximum temperature 79, minimum 24; precipitation .09 inch.

SHERIDAN:

Warmer weather has prevailed during the greater part of the past week and all vegetation has been making a better growth. Land for corn in the rotation field has been plowed and partially prepared for seeding. Rain on the evening of the 14th delayed further preparation of the ground and seeding of corn.

Moisture conditions still remain good, although the surface of the ground where cultivated was getting dry before the rain.

Maximum temperature 77, minimum 32; precipitation .45 inch.

DICKINSON:

A freeze last night with a minimum of 20 degrees did considerable damage. It appears that most of the fruit was killed and even the small grains were damaged some by the freezing of part of the leaves. Some of the flax which was small was killed, but that farther along is recovering.

Dickinson, continued:

Corn in the rotations was planted May 11, the varieties on the 13th, and the nursery on the 15th and 16th.

Flax plats on the roations were seeded May 12 and the fourth date on the tillage experiment on the 16th.

Seedings of wheat, oats and barley were made in the date-of-seeding experiments.

Plenty of wild oats is coming in the eradication experiments. The stand is now about four times as thick on the disked as on the spring plowed plats.

A good deal of sod has been plowed in this district to be seeded to flax. It is now becoming too dry to plow well. There has been very little rain during May, so that pastures and hay land now show the need of water.
Maximum temperature 76, minimum 20; precipitation .02 inch.

MANDAN:

Agronomy.

Another week of dry weather has passed. A light shower came on the 14th and 15th totaling .24 of an inch. The rain was followed by a heavy freeze on the night of the 15th. The surface soil was frozen in spots.

Small grains are nearly at a standstill. Winter rye shows signs of drying up. Crested wheat grass in drilled plats is dried up on most of the plats. In rows it is still making some growth.

Plowing for corn was completed during the week in the feed fields and in the rotations. About 13 acres of corn had been planted in the feed fields, also the corn varieties for the Office of Cereal Investigations, the silage test for the Office of Forage Crop Investigations, and the seed blocks. The rotations will not be planted until next week. The soil is dry and cold, and it is doubtful if corn can germinate before a good rain comes. Potatoes were planted in the rotations.
Maximum temperature 79, minimum 23; precipitation .24 inch.

Cooperative Grazing Experiment

Native vegetation made very little growth during the week. The cattle ran short of feed in the reserve pasture, and were turned into the hay land where there is plenty of feed.

Mandan, continued:

Initial weights of the cattle are being taken, and they will be started in the various pastures as soon as possible.

The well and pipe lines are being put in condition for the summer. The water is getting low in the dam in the reserve pasture.

## Arboriculture

Thirty-five thousand evergreen seedlings have been received from the Cloquet Forest Experiment station, and are being lined out in the Shelterbelt nursery. The following species are included:- European larch, Japanese larch, Black Hills spruce, Scotch pine, Jack pine, Norway or Red pine. On account of the dry condition of the surface soil, it was necessary to irrigate the ground in which these seedlings are being planted.

## Horticulture

A temperature of 23 degrees on the night of May 15 has apparently caused the death of most of the fruit buds and blossoms that escaped earlier frosts. It is as yet too early to tell how extensive the damage will be, but it is thought that most fruit crops will be failures or very light this year.

More winter injury to fruit trees occurred during the past winter than in any previous winter since 1917-18. Many branches of some varieties have failed to start growth, but do not appear to be entirely dead, and may yet start growth, in case heavy rains should fall in the near future. Sapa plums show a great deal of this type of injury, only a few branches of most trees having started growth at the present time. Oregon gooseberries were killed to the ground, and Poorman gooseberries, as well as some currant varieties, such as Gherry, were partly killed.

The lawns at the station were irrigated during the week as they were beginning to suffer from drought. It has seldom been necessary to irrigate so early in the season.

Asparagus tips were again killed by the frost. This makes the fourth time this season that such tip killing has occurred.

Stakes have been lettered and placed in the field, and other routine work carried on.

Visitors to the station included Messrs. R. Scott Zimmerman, Leader of Rodent Control, with headquarters at Fargo, North Dakota; Theo. Shoemaker, In Charge of Public Relations, Forestry Service, from Missoula, Montana; General Superintendent Lowry, of the Northern Pacific Railway, from St. Paul, Minnesota.

ARCHER:

During the past week the weather has been cool, misty and foggy with rain occurring May 15 and 16. The total precipitation for these days was .26 inch. During the 15th a heavy wind from the northwest forced rain, mist and fog into every crevice of the buildings and drove the cattle from the pasture.

The work at the station has consisted of hauling manure, repairing fences and machinery, planting potatoes, finishing the plowing, seeding of corn for silage and increase fields and the seeding of a portion of the varietal plats to small cereals. The seeding of corn on the Dry-Land plats is in progress.

The winter wheat is making rapid growth and some of the spring cereals are emerging.

The pasture grasses have grown considerably since the rain of last week and the stock on the ranges are generally in good condition.

Professor W. L. Quayle and the Superintendent visited the Wyoming Hereford Ranch on April 13, and made preliminary arrangements for the conducting of a pasture experiment. It is planned to use six pastures of 320 acres each, and 117 registered 2-year old Hereford heifers throughout the year. The Wyoming Hereford Ranch Company is desirous of securing more definite information as to the carrying capacity of their pastures. The Superintendent is also directing the cropping of their tilled land and native meadows.

Maximum temperature 68, minimum 35; precipitation .27 inch.

AKRON:

Rains threatened during the last days of the week but only .27 inch was received, which afforded but temporary relief to the suffering winter wheat and rye. All plat treatments of winter wheat, except the fallow and the furrow seeded plat, are burning badly, some so badly already that it is questionable just how completely they would recover should ample rain be received now.

The second seeding of cereal oat and barley varieties has emerged. Earlier seeded plats of spring sown small grains are at a standstill, not so the thistles, however, which are in some cases matting the ground. Usually the small grains outgrow the thistles quite successfully at this period in their development, but it appears now that all spring sown small grain plats will be very weedy.

The sweet clover in the perennial forage experiment has emerged, and presents a perfect stand. Aside from a few scattering plants of the perennial rye grass, this is the only variety out of those planted last spring to survive. In this light the sweet clover, both the white and the yellow blossom varieties, presents a striking appearance.

Akron, continued:

Sweet clover seeded in February, and later reseeded by scattering seed over the surface of the ground, has never emerged to a stand. Cutworms may have been a factor here though poison bran was scattered over the ground at three different intervals.

Roads were duck-foot cultivated the last of the week. The Rate and Spacing corn experiment was seeded Monday. The Rotation Extension, or the Uniform Cropping Series of plats, were listed to corn Tuesday and Wednesday. The sheep rotation corn fields were seeded before the rain of Thursday. Other station work was odd jobs, and fencing.

Maximum temperature 72, minimum 40; precipitation .27 inch.

NORTH PLATTE:

Unsettled weather with low temperatures and strong winds has prevailed during the week. Precipitation amounting to 1.38 inches has occurred during the past two days. Precipitation for the month to date, on the table, amounts to 2.10 inches.

Germination of corn is being delayed by low temperatures. Plantings made on the first of the month are sprouting but show no signs of emerging.

Rye is heading and early varieties of winter wheat are in the boot. Condition of small grain has improved during the week, but it will not be possible for the injury caused by drought in April to be fully overcome.

June 16 has been selected as a tentative date for a crops field day at the station.

Dean E. A. Burnett visited the station during the week.

COLBY:

The greatest precipitation in any one rain for over a year fell beginning Thursday evening about 7:30 p. m. This rain of 1.09 inches fell in a relatively short time which caused considerable run-off. In spite of the rather large run-off the penetration of the rain was very good and with the two days of cool weather which has followed should soak well into the ground. The ground was working fine previous to the rain. Corn planting was not finished on the station previous to the last rain. A good germination has been secured on the corn that has been planted but none has, as yet, emerged.

Winter wheat on early seeding is showing considerable heads, especially of the earlier varieties. Winter wheat is not as far advanced for the reason that it was just previous to the cold weather the latter part of April.

Colby, continued:

Barley, oats, and spring wheat are growing rapidly now. A few of the very early varieties of barleys are showing a few heads. Some of these barleys that were just heading were knocked out of the boot, either by the hard dashing rain or by the small amount of hail that came with the rain.

The temperature has remained rather cool the past week, with a low wind velocity, except at times, and with a relatively low evaporation. All fruit, except some of the later cherries, was killed by the frost. The late cherries are going to have sufficient fruit to make a good crop. Alfalfa is very short, the rains coming rather late for the first crop.

Work during the week has consisted of general clean up work with odd jobs being done after the rain. The orchard was spring-tooth harrowed just previous to the rain. An old implement shed was torn down and some of the lumber used for making a fence. This should help the appearance of the place considerably. Moving into the new house was completed by the writer during the week. It will probably be Tuesday before any field work can be done.

GARDEN CITY:

A rain totaling 1.47 inches of moisture was received the night of the 14th. This rain was accompanied by a light hail which did little damage in this immediate vicinity. This amount of moisture was received in about an hour and considerable run-off took place.

The small grains were showing the need of rain quite badly. Winter wheat on continuously cropped plats was beginning to fire. Fallowed wheat was not firing, but was beginning to roll during the heat of the day. Most dry land winter wheat is beginning to head or is in the boot. Rye that is to be turned under for green manure has headed at about an average height of 18 inches.

Field operations for the week have consisted of preparing the seed bed for row crops. Because of the rain, it was necessary to postpone the planting of the first date of sorghums. The rabbit proof fence around the Dry Land Project was completed this week.

Maximum temperature 82, minimum 42; precipitation 1.47 inches.

DALHART:

More precipitation was recorded this week, which puts the fields in excellent condition at this time. These rains came in slow steady showers, making it possible for the soil to take it up readily without loss by run-off. The total for the week is 1.39 inches, falling Saturday and Sunday nights. The rain on last Saturday night netted .56 inch and that on Sunday was .83 inch. The week as a whole has been rather cool. Friday was quite warm but turned cool again toward evening, then about 10 p. m. a hard wind came up from the north and continues today. This day is quite cool, since the wind is not blowing as hard as when it came up last night.

Dalhart, continued:

The first date of cotton, consisting of Burnett and Acala, was planted on the 13th. This date should have been planted on the 9th or 11th, but on account of the rain it was impossible to get it planted on time. The plats were prepared for planting the second date-of-planting on the 14th and planting was made that evening. The weather at that time was threatening so the date was put in on the evening of the 14th rather than to take chances of being delayed on account of the rain. The plats were in excellent condition for planting. The first date was harrowed in order to break the crust. The varieties in the first date were emerging on the 14th but the stand is not up to standard at this writing. The plats were prepared this week for planting field corn and the corn is being planted today. Preparation of the kafir plats on the rotations and C. C. methods is under way and everything will be in readiness to plant the kafir on Monday, weather conditions permitting.

Mr. Bridenstine, a representative of the Office of Biological Survey, visited the station this week. Some experimental poisoning work was conducted in poisoning jack rabbits and rodents. Some good kills were made with a new poison consisting of wheat bran, 5 pounds, syrup, 1 quart, water, 3-quarts, table salt, 1 tea-cup full. To this was added one ounce of strychnine alkaloid. Some feterita was also used in poisoning, taking the other ingredients in the same ratio, (using less water and syrup, since it takes less to coat the grains). This also gave excellent results with rabbits and rodents. Most of the rabbits killed were females and all carried from two to three young. When using the bran mash it should be mixed so that it will form a ball, and put out as such rather than broadcast it.

A soil sampling was made in a representative portion of the plat field, this week, to determine the extent to which the soil moisture had penetrated. It was found that the first two feet were well saturated, the third foot had fair moisture, and moisture increased to a marked degree from the fourth to the sixth. The moisture in the fourth and sixth foot is excellent. The third foot has not been increased by the late rains but contains a fair per cent. It is quite likely that some of the moisture from the second foot will be taken up by the third. Some of the farmers state that they are hitting dry dirt in listing, in some places. Where proper precautions were taken before the rains the moisture has penetrated far below the line of the lister.

This spring a good number of farmers have visited the station seeking information. Several have brought seed here to clean for planting. Several visitors have been coming each week, some were local people while others were from a distance.

TUCUMCARI:

Following rainfall totaling 1.63 inches in five consecutive days, field work has progressed rapidly the past week. The surface foot of soil is well soaked, but the lower levels are still very dry, indicating the necessity of abundant summer rainfall if crops are to be produced. Plowing has been pursued the past week and a large area will be ready for the planter early next week. Planting of the north field plats will be completed today, while all center fields plats will probably be planted Monday. The May 15 date of planting was made, after this ground was plowed early in the week. The May date plats were listed in before the rains and many of the seeds were buried so deeply during rains that it is doubtful if stands will result. A few of these plats are showing partial stands, while practically no seedlings are up on other plats.

The steers on feed were weighed May 15, at the completion of the sixth thirty-day period. The gains were not nearly so large as in the preceding month, but all lots gained approximately the same. The gains per head per day for the entire period of 180 days is approximately 2 pounds. Feeding will continue until the middle of June, making a total of 210 days.

| | Lot No.1 | Lot No.2 | Lot No.3 |
|---|---|---|---|
| Average May 15 | 719.0 lbs. | 715.5 lbs. | 737.0 lbs. |
| " April 15 | 659.0 lbs. | 655.5 lbs. | 680.0 lbs. |
| Average gain | 60.0 lbs. | 60.0 lbs. | 57.0 lbs. |

Most fall sown small grain over this locality is dead and much of this will be fallowed in preparation for fall seeding, while other fields will be planted to row crops. Farm work is progressing rapidly, since most parts of the county have had sufficient rainfall to permit listing and plowing. Due to the late spring rainfall, the cotton acreage will doubtless be less than expected.

Maximum temperature 86, minimum 48; precipitation .98 inch.

WOODWARD:

Practically no rain has been received at this station during the past week. On Tuesday night .05 inch was recorded. In town, about a mile and a half northeast, .55 inch was recorded by the Weather Bureau Observer, and a much heavier rain was reported north of the River. There was also an unconfirmed report of a heavy hail twenty-five or thirty miles north.

Most of the past week was spent in preparing land for row crops, principally leveling lister ridges with two-row cultivators. The orchard was sprayed for the second time, and some alfalfa has been harvested and is being hauled in at present. Rye hay from rotations and check plats, which was harvested about two weeks ago, has been hauled and weighed. This was left in shock for some time, because of wet weather. Alfalfa and sweet clover, which were sown the latter part of April, are coming up in a good stand. Corn on the rotations, planted May 4, was up to a good stand on May 14. Building operations on the herdsman's cottage and dairy barn are progressing.

Maximum temperature 89, minimum 45; precipitation .05 inch.

BELLE FOURCHE:

The first three days of the week were warm, and crops that had shown no previous signs of drought injury commenced to fire. By the 13th it was estimated that 90 per cent of the winter rye was firing. The alfalfa ceased growth and started to kill back. Rain on the 14th and 15th revived these crops and they are now looking well. A total of 1.10 inches fell during the two days. There was no loss by run-off.

The corn in the rotations was planted on May 11. The fall plowed land was in excellent condition, and the spring plowed land probably was moist enough to bring up the corn. The rain since planting should insure germination on all plats.

Potatoes were also planted during the week. The potatoes were planted in lister furrows on stubble land that had not been plowed. As is usual, the condition of the soil was much better than on plowed land.

The spring grains have made about their normal amount of growth and are looking well. Winter rye, which had been checked by drought, has recovered rapidly and is commencing to head. Winter wheat is making very slow progress and is not much further advanced than spring wheat.

Maximum temperature 78, minimum 33; precipitation 1.10 inches.

There was a light frost on the morning of the 16th, but no killing frost.

ARDMORE:

Precipitation amounting to 1.35 inches was recorded on the 15th and 16th, which was the heaviest rainfall at this station since August, 1923. The ground was very dry and as the rain fell very slowly there was very little run-off.

Alfalfa, wheat grass and native pastures have been badly damaged by the long continued spell of dry weather, and alfalfa has been considerably hurt by frost. It is doubtful whether this crop will recover sufficiently to make a fair yield of hay.

A number of fields of corn were planted during the week. The rotation plats have not been planted.

Maximum temperature 74, minimum 34; precipitation 1.33 inches.

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# WEEKLY STATION REPORTS

OF THE OFFICE OF

# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 23 1925

REPORT FOR WEEK ENDING MAY 23, 1925.
(Unless otherwise indicated.)

HAVRE:

The past week was warm from the 18th to the 22nd with a maximum of 90 degrees on the 21st. The morning of the 17th the minimum was 32 degrees. There was a light frost but not as severe as the frost of the previous week and no additional damage could be noted.

Compass cherries and wild plums bloomed during the week. There seems to be a small percentage of unfertile or injured flowers.

Corn plats in the rotations and variety tests were planted during the week. Land, which was spring plowed, is dry on the surface but with deep planting the corn should germinate. Commercial fields of corn are prepared and land for irrigation is being plowed and prepared for seeding.

We are starting 14 one-fourth acre plats of continuous and rotation cropping under irrigation this season. As a sugar beet factory is being built at Chinook, 20 miles east of Havre, and with a beet acreage in the Milk River Valley of about 6,000 acres, there is some demand for information on beets. Some of the irrigated plats will be planted to beets.

Chancellor M. A. Brannon, of the University of Montana, was a station visitor on the 18th.

JUDITH BASIN:

Strong, hot winds have prevailed throughout the week. The evaporation has been extremely high and only a trace of precipitation was received. No precipitation of any material benefit has been received for over a month, and several crops are suffering from lack of moisture. About 25 per cent of the alfalfa on the station has been burned beyond recovery, and brome grass and many of the pasture grasses have been injured quite extensively. Winter rye is about 10 inches high and is commencing to fire. Winter wheat has not made a great deal of progress but does not show much sign of suffering from lack of moisture. All spring crops appear to be in good condition and are growing vigorously.

Field work has consisted chiefly of seeding about 45 acres of experimental pasture blocks, plowing summer fallow land, trimming plats, and cultivating roads.

Maximum temperature 82, minimum 35; precipitation, Trace.
Evaporation 1.619 inches.

HUNTLEY:

Unseasonably warm weather during the fore part of the week caused considerable wilting and burning to crops already suffering from the shortage of soil moisture. The last two days have been cooler and more cloudy, however, and the wilted plants have regained, to a large extent, an appearance of health.

As has been the case during the last week or two beneficial showers have been received in the surrounding territory but this locality has been favored only with thunder and lightning and an occasional sprinkle.

Field work has consisted of planting sunflowers, corn and potato varieties, weighing the hogs on perennial pastures, and cultivating roads and alleys.

Maximum temperature 89, minimum 35; precipitation .04 inch.

SHERIDAN:

Unusually warm weather for this time of the year has prevailed over the most of the week. There has been considerable wind, and the ground is drying fast.

All vegetation is growing rapidly. Winter rye began to head early in the week. Brome grass and crested wheat grass are now beginning to head. The corn was planted the first of the week. Potatoes were planted the 20th. Roads and alleys have been cultivated.

Maximum temperature 88, minimum 41; precipitation .07 inch.

DICKINSON:

The fore part of the week was warm, dry and windy; the middle of the week was hot, dry and windy with a maximum of 95 degrees on Thursday and followed by a hard shower. Saturday was cold and windy.

Since the rain the appearance of crops has improved to some extent but greater damage was done by the freeze of May 16 than was indicated by the report of a week ago. Early grains were retarded fully two weeks in development and the stands in most fields thinned. Later grains, except flax, were not damaged greatly. Flax seeded on May 1, and which had emerged only a few days before the freeze, had about 85 per cent of the plants killed. Plants of flax 2/3 inches high show only a small per cent of loss.

Weeds survived the freeze better than the grain crops. Only a very few Russian thistle were killed. Unless plenty of rain causes rapid growth of the grains, most fields will be weedy.

Weeds survived the freeze better than the grain crops.

Dickinson, continued:

Corn on the rotations, which was planted May 11, is emerging.

Roadways and alleys were cultivated and weeding started in the fields and trees.

A field on the Normal School land to be fallowed was plowed, as the fan weed had started to set seed.

Cabbage plants were set in the garden on May 16, and a part of the tomato plants on May 22.

Mr. C. N. Ainslie, of the Bureau of Entomology, was here May 21 in connection with studies on Hessian fly. A few eggs of the fly were found on spring wheat but it is still too early to determine the amount of infestation which may result.

Maximum temperature 95, minimum 28; precipitation .56 inch.

MANDAN:

Agronomy

The past week has been dry, with extreme heat and high winds on two days. Hot winds prevailed during parts of two days. On the 19th and 20th the temperature went to 89 degrees and on the 21st to 94 degrees. There have been indications of rain on two days, and a light rain is falling today. The temperature has dropped during the last two days. A heavy rain was reported south of Mandan on the 21st. It is reported that the freeze of last week killed wheat in some areas.

Corn was planted in the rotations during the week. The corn breeding block was also planted for the Office of Cereal Investigations.

The second planting of alfalfa and sweet clover was made for the Office of Forage Crop Investigations.

Alfalfa and sweet clover are making very little growth and are drying up in spots. Wheat grass in the drilled plats is dried up, and brome grass is at a standstill.

Small grains are still in a fair condition, but are making no growth. Winter rye is starting to head out at a height of about a foot.

Work is starting on the roads between the series of plats. All alfalfa, brome grass, and wheat grass in rows were cultivated for the second time.

Maximum temperature 94, minimum 27; precipitation .03 inch.

Mandan, continued:

Cooperative Grazing Experiment

The cattle were divided and put in the different pastures early in the week. The average weight of the steers when started on the pastures was 774.5 pounds per head.

The pastures are in the poorest condition that they have ever been at this time of year, since the experiment started in 1916. Unless a good rain comes soon, the brome grass, 30-acre, and 50-acre pastures cannot carry the cattle but a short time.

Arboriculture

The work of lining out the conifer seedlings in the nursery was completed May 22.

Mr. B. S. Schmidt, a shelterbelt cooperator in Grant County, North Dakota, sent us a small amount of Chinese elm seed that he gathered last June. He reports excellent germination of this seed in two trials - the first in February and the second in March - and has requested that we try the seed at the station. This seed has been planted in a framed seed bed, and the results are being awaited with interest, as it is a generally accepted idea with nurserymen that elm seed cannot be stored.

Horticulture

Five hundred selfed sweetcorn selections were planted the first part of the week.

Curcubits and navy beans were planted, and tomatoes, eggplant and peppers, set out in the acre-garden.

Cutting grass and continued road weeding on the grounds was carried out.

The intermittent freezing and hot, windy weather, has caused much damage to the ornamental shrubbery and tree plantings on the grounds. Common and named French lilac flower buds were all killed, and those of the Persian lilac partly so. The ash, Chinese elm, and basswood are as yet without foliage, having had the first leaves partly frozen. The tartarian honeysuckle is at present making the best display of bloom on the grounds.

Sprouts have been removed from budded nursery stock, and suckers from currant bushes.

Soft wood cuttings of gooseberries and yellow flowering currants have been made.

ARCHER:

From the cold weather of the first part of the week there was a sudden rise to summer temperature during the greater part of the week with dry winds from the northwest. This condition has made the grass and some of the winter wheat show the need of moisture. The crops, generally, have not suffered. The winter wheat in the general field has made a rapid growth and rolled some during the middle of the week. Some of it is beginning to boot. Only a few plats of miscellaneous seedings remain to be done.

All of the old trees have been cultivated and the new plantings have been watered in order to counteract the dry weather and secure a start of active growth. The last of the cleaning of barn yards will take place today.

Maximum temperature 87, minimum 36; precipitation .01 inch.

NORTH PLATTE:

In contrast to the cool weather, which had prevailed during the month up until this week, there has been a sudden change to the other extreme. Maximum temperatures reached 95 degrees on two days. The mean temperature has been about 20 degrees above that of the previous week.

Corn has all emerged with good stands. There was but little difference in time of emergence of plantings made at any time during the first 15 days of the month.

Grain crops have all made a good growth. Sorghum and milo were seeded in the rotations during the week. All roadways and alleys have been cultivated.

COLBY:

Weather conditions remained favorable for field work during the week. The planting of corn on the station was completed during the week. The corn planted consisted of varieties, selfed lines of nursery material, and isolated seed plats of different types. Corn planted previous to the last dashing rain is just beginning to emerge. All of the other corn is showing sufficient stand. On the D. L. A. project apparently every stalk came. The surprising thing is the emergence on the listed plats. This is fully as thick a stand as that on the surface planted. The plats showed a stand by the 20th. Pinto beans, planted the same time as the corn, are just emerging. The thick crust is retarding the emergence of the beans. A rain of 0.17 inch late this evening should soften the crust considerably for the emergence of the beans.

Colby, continued:

Winter wheat is almost fully headed on some of the plats. The later plats are just showing a few heads. Barley is about 50 per cent headed. Oats have not reached the heading stage as yet. Quite a number of the barleys in the barley nursery are heading. A very surprising number of 290 varieties recently introduced by Dr. Harlan, which are included with our other barley nursery material, are earlier than our standard varieties, Stavropol and Club Mariout, and at heading time are very promising.

The fallow plats on the D. L. A. project were plowed during the week. Soon after plowing they were packed with the disk set straight. Soil sampling of eight wheat plats show that penetration of the late rains did not reach lower than the first foot. The rye plats for green manure were plowed under at the same time that the fallow plats were plowed. There was not a very rank growth of rye turned under. These plats were wet only as deep as plowed, the plow running on dry ground at a depth of 7 inches. The rye had made a very rapid growth since the May rains, however.

Evaporation has been quite low during the week. This has been due to the low wind velocity on days that the temperature reached new high levels for the season. The maximum temperature during the week was 95 degrees, while 92 was recorded on another day.

HAYS.

The temperature has ranged unusually high during the past week with one day of hot wind. It is the earliest date recorded on the Dry Land Project for 100 degree weather. Only one other year has the temperature reached 100 in may.

The small showers, which fell earlier in the month, were used up by the winter wheat as fast as they fell, and at present the wheat is suffering extremely from drought except on fallow.

Except on fallow, the wheat ranges from 6 to 24 inches high, and is about 10% headed, many of the heads having difficulty emerging. On fallowed ground the wheat is very even at a height of 30 inches, 100% stand and 90% headed, and looking very good. It is, however, just commencing to wilt a little, but still has a chance for 25 bushels.

The precipitation record for the past ten months, together with the moisture content of the soil, and present climatic conditions, point toward a crop failure for this season equal to that of 1911, 1913, and 1917, or even worse, for the reason that frost destroyed the first crop of bottom land alfalfa which would have been good. The second crop has started, but there is not sufficient moisture in the ground to make much of a crop without a great deal of rain soon.

Hays, continued:

The spring grains are commencing to head at a very short height. These crops have not yet burned, but are needing rain very badly.

Rye made only a light growth and had commenced to burn when it was plowed under for green manure.

The first planting of corn made a poor stand. It was replanted May 22. Sorghums were planted May 22 and 23. Newly seeded alfalfa and brome now show a fine stand. Hessian fly damage to wheat is now showing up heavily in many fields.

Maximum temperature 101, minimum 46; precipitation 0.

GARDEN CITY:

Exceptionally high temperatures, for this time of the year, have prevailed during the past week. On Thursday the thermometer reached 102, which is the highest maximum temperature on record at the station for the month of May. The high temperatures, together with some wind that was almost hot, have been pretty hard on all small grains. Winter wheat on fallow is still looking promising, but that in rotation is showing the need of moisture. The past few days have been hard on spring small grains. Oats have turned brown in color and will probably die unless rain is received in the near future. Most of the winter wheat is as far advanced at the present time as it was on June 10 last year.

All corn plats on the Dry Land project were planted this week. The first date of planting sorghum was made on the 18th and is partly emerged at this time.

Maximum temperature 102, minimum 45; precipitation 0.

DALHART:

This has been a warm week. No precipitation was recorded, although Monday and Tuesday were cloudy and misty until noon. The remainder of the week has been unusually hot. The maximum temperature recorded was 96 on two days. The minimum temperature for the week is 47. Two days were quite windy, causing considerable soil blowing in this section. Very little station soil changed hands. In occasional places the soil would pick up during an extra heavy gust but would soon quiet down. Fortunately, the duration of these winds was short.

Considerable headway was made this week with the field work. The kafir was planted on all the rotations and C. C. methods, the first of the week. At this writing the kafir is up to a good stand. Cotton was planted on the regular date, six varieties being put in. The spacing test with cotton was also made. In the Cereal and Forage work the later maturing varieties of grain and forage sorghums were planted. The spacing work with Reed's kafir was planted at the same time the varieties were planted.

Dalhart, continued:

A nursery planting was made consisting of some selections of Reed's kafir in head to row test, some early maturing Reed's, as well as a number of selections that it was thought best to make row tests on rather than to devote an entire plat to. In this nursery were placed several selections of kafir milo crosses made by Mr. Sieglinger of Woodward, Oklahoma.

The preparation of plats for planting has progressed during the entire week without a halt. The work will continue next week as rapidly as possible. The plats were prepared for planting milo and cowpeas on the rotations. These crops will not be planted until a little later.

More poison was put out during the week and some good results were obtained. There were not many rabbits killed, but the field mice, ground squirrels and kangaroo rats were killed in goodly numbers. These rodents were digging out the crops that were planted. At this writing, the damage has not resulted sufficiently to cause a short stand. It is thought that the results obtained by poisoning will hold the rodents in check so that no further damage will result. Many rabbits are being killed by shooting.

Considerable damage was done this week by the winds to the Chinese elms. Several of the trees were broken down, while others had some large limbs broken. The trees that have grown without bad forks are in good shape and have stood the winds without damage. The evergreen seed planted in the nursery is germinating in good shape. Some has been up for several days. Most of the variety tree planting is coming through in good shape.

TUCUMCARI:

All center field plats were planted early in the week, and practically all north field plats, planted late last week, showed good stands five to six days after planting. Soil moisture samples taken during the week showed the subsoil to be quite dry, although moisture is abundant in the first and, in some cases the second foot.

The spacing plats with kafirs, fifteen plats; spacing cotton plats; and the May 20 date of planting with seven varieties of cotton, were planted during the week. Increase land for Sumac cane, both rowed and broadcast, for steer forage, was prepared and planted, as was an increase field of Sunrise kafir.

High temperatures and strong winds several days the past week dried the surface soil rapidly, so planting with furrow openers was necessary. During the coming week the variety plats of sorghums and most of the remaining increase fields will be prepared and planted.

Reshingling of the superintendent's cottage and the office is being completed today.

Tucumcari, continued:

Ranges are at last showing new grass, but more rainfall is required to bring pastures up to normal condition for this time of year. Planting over this locality is being rushed as rapidly as possible and in most cases good stands are emerging.

Maximum temperature 96, minimum 51; procipitation 0.
Evaporation 2.295 inches. Wind velocity, 6.8 miles per hour. Total precipitation for the past seven months, 2.87 inches.

BIG SPRING:

Weather conditions during the past week have been warm and dry; field work during this time has been rushed to the limit of the station horse power.

On May 15 the cattle feeding tests, which have been conducted here for the past 168 days, were brought to a close. On this date a feeders day meeting was held at the station. Although the farmers were very busy at this time, about 200 farmers and ranchers attended the program which had been prepared for that day. At noon the local Chamber of Commerce served lunch to the gathering.

The following is a brief summary of the feeding work as carried on during the past 168 days:

| Rations used. | Lot 1. Sumac silage Ground Milo Heads Cotton Seed Meal Sudan Hay | Lot 2. Cottonseed Hulls Ground Milo Heads Cotton Seed Meal | Lot 3. Sumac Fodder Ground Milo Heads Cotton Seed Meal |
|---|---|---|---|
| Ave. initial wt. | 506.57 lbs. | 504.44 lbs. | 506.67 lbs. |
| " final " | 885.44 " | 815.20 " | 880.20 " |
| " gain per head | 378.87 " | 310.76 " | 373.53 " |
| " daily gain per head | 2.26 " | 2.14 " | 1.88 " |
| Cost of feed per head | $ 43.38 | $ 42.27 | $ 43.36 |
| Feed lot valuation per cwt. | 11.00 | 10.00 | 10.60 |

These calves were valued in the feed lot by representatives from a commission company and a packing company of Fort Worth.

The D. L. A. plats were all harrowed, disked and planted during the week. The cotton and the grain sorghums in the cooperative tests were also planted. The sorghums in the May 15 date of seeding tests are up to good stands, but the cotton is coming up very spotted.

Maximum temperature 96, minimum 55; precipitation 0.

LAWTON: Week ending May 16, 1925.

Another week of weather, that was mostly cool, and cloudy, and frequently interspersed with showers, interrupted field work that is becoming urgent. Cultivated soil is pretty well filled with moisture and but little precipitation is required to delay planting and further cultivation. In the immediate vicinity the rainfall was light until the night of the 16th, when .80 of an inch was recorded. In the city of Lawton more than an inch fell and surrounding towns reported flood conditions in several instances.

The weather is very favorable to the growth of small grains and grasses but the temperatures are yet too low for satisfactory growth of row crops. A good many fields of oats on bottom land now indicate the probability of pretty good yields. On the uplands the yields cannot be large. The station yields of oats have already been heavily cut by smut. At the present time fully 35% of the heads are blasted by smut. In the past this difficulty has not been encountered.

Wheat is heading very unevenly. Many very small, late heads are emerging on plants that will likely be too short to bind. The early, better developed heads are also far from normal size. Although a few farmers feel rather optimistic about the final yields, it is fairly safe to assert that the crop as a whole throughout the county will not more than pay the expenses of harvesting and threshing.

The November 1 seeding in the rate and date tests now indicate the probability of a better yield than either the September seedings or the October 1 date.

The grain sorghum and Forage sorghum projects were planted May 14 and 15. Kafir and cowpeas were also planted on the rotation plats in Field A on the 15th.

Maximum temperature 90, minimum 52, Rainfall recorded on 6 days of the week amounted to 1.01 inches.

LAWTON:

Warm, sunny days with a brisk wind movement prevailed throughout the week. A maximum temperature of 92 and a minimum temperature of 54 were recorded. The precipitation for the week amounted to .05 inch.

The grain and forage sorghum projects, which were palnted on the 14th and 15th, were up to a good stand on the 21st and 22nd. Kafir planted in Field A on the roation plats on the 15th is emerging with considerable difficulty because of the hard crust on the surface soil made by the rain of .80 inch on the 15th.

Lawton, continued:

Planting of all crops on the rotations was completed on the 22nd. Alfalfa that was not pastured during the winter finally made a fairly good recovery and will yield a light to fairly good cutting of hay. A few nearly ripe heads of oats are seen in the plats and fields and wheat is taking on a brownish cast.

The grasshopper menace continues with damage confined to local areas. To date the cool weather and abundant growth of grasses has tended to retard the migration of grasshoppers to field crops. The cool weather has also prevented the efficient use of poison. With the advent of hot weather it is reasonable to expect heavy damage to such crops as cotton and corn.

WOODWARD:

The past week has been hot and dry. There have been hot winds several days. Wheat on the station is in the dough and is ripening rapidly. If present weather continues, we will probably have to harvest within 10 days.

Planting of the fields is going forward. Sudan grass for pasture is being planted today. Some planting has been done on the Cereal Project, and the second date of cotton planted.

Some poison bran has been broadcasted for grasshoppers, and more will be put out tonight. Some delayed pruning and thinning of peaches is being done. Most of the grapes have bloomed and set good crops of fruit.

Maximum temperature 100, minimum 48; precipitation .07 inch.
Evaporation 2.112 inches. Average hourly wind velocity 7.6 miles.

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# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 30 1925

REPORT FOR WEEK ENDING MAY 30, 1925.
(Unless otherwise indicated.)

JUDITH BASIN:

The drought which has prevailed for the past month was broken by a rain of .52 inch on the 25th. The remainder of the week was comparatively cool and all crops have shown considerable improvement. The precipitation was received just in time to prevent extensive injury to alfalfa and other hay crops, and afforded relief to winter wheat, which was commencing to show signs of suffering from lack of moisture. Alfalfa was burned quite badly in spots and it is impossible, at present, to determine to what extent this crop will recover from the effects of the drought. All small spring grains have made a good growth. Flax, sweet clover and corn are up but the stand of corn is very uneven as the ground was so dry that some of the corn did not germinate until after the recent rain.

Field work has consisted of plowing summer fallow on the Cereal Project, harrowing corn on the rotations, planting potatoes, cultivating trees and seeding several hog pasture blocks to sweet clover and alfalfa.

Thomas W. Moseley, of the Huntley Experiment Station, was a visitor on the 27th and 28th.

Maximum temperature 79, minimum 41; precipitation .57 inch.

HUNTLEY:

A gentle rain fell throughout the night of May 24 and temporarily relieved the droughty conditions which have prevailed for several weeks. Following this rain, ideal growing conditions have prevailed and small grains and corn have responded accordingly. Alfalfa and brome grass, however, continue to look wilted and from appearances these crops did not benefit greatly from the shower.

The principal field work during the week has been the lining out, cultivating and grading roads and alleys, planting soy beans, Sudan grass and sorghums in the various experiments and the taking of soil samples.

Maximum temperature 86, minimum 37; precipitation .53 inch.

SHERIDAN:

Seeding of late forage crops, including sorgo, Sudan grass, millet, soy beans and cowpeas, and the navy beans, was completed during the week. Certified seed of several strains of potatoes received from the state station at Laramie also were planted.

Sheridan, continued:

Corn seeded on fall plowing emerged the first of the week. That seeded on spring plowing is emerging unevenly, due to poor moisture conditions for some depth from the surface.

Hot weather during the past two days caused alfalfa to wilt some. Most crops have been making a rapid growth. Grass land, and plowed land on the surface is getting rather dry. Cultivated ground shows good moisture conditions below the surface, however.

Maximum temperature 91, minimum 41; precipitation .44 inch.

HAVRE:

Temperatures during the week were about normal and all crops that were germinated made fair growth. Some damage resulted from a short but very severe wind storm on Thursday evening. Friday evening two showers, totaling .63 inch, relieved the drought of a month. The total precipitation for the month of May was .77 inch, while the normal is 1.89 inches. The rain of Friday night was general over the Triangle and was of especial value to late seeded wheat, much of which has germinated only in spots. Winter rye and crested wheat grass are both heading at a height of less than a foot. It is doubtful if the rain will materially increase these crops.

The last week shows that there was much more injury from the frost to cherries and plums than was at first noticeable. The percentage of the blooms that set is small.

During the last week 20 acres of irrigated land was prepared for diking and seeding to alfalfa.

DICKINSON:

The crop outlook has improved somewhat during the week. One light shower was received but most crops show the need of rain, particularly pastures and forage crops.

Grains have grown slowly from lack of water. On farms some reseeding has been done on low or exposed places where the grain was frozen. Rye is heading very short and even this crop in low places show the effect of the freeze.

Corn has emerged unevenly on the rotations, that on fallow being ahead of other tillage methods. All corn was harrowed during the week.

New stakes were prepared for the rotation plats. Considerable repair and cleanup work has been done during the week.

Maximum temperature 92, minimum 35; precipitation .25 inch.

MANDAN:

## Agronomy

The weather for the past week has been moderately cool except for the last two days, when temperatures of 88 and 97 degrees were recorded. Light rains on the 26th and 27th amounted to .39 inch. Thus far crops seeded this spring do not seem to have suffered from lack of moisture, except shallow seeded crops such as alfalfa and sweet clover. Moderately high winds accompanied the high temperatures the latter part of the week.

From 5 to 15 per cent of barley in the South field C. C. plats is apparently killed from the last severe frost.

Corn is up from all plantings up to the 20th. A good stand was secured. All grass crops are at a standstill on account of drought.

Winter rye headed out on the 25th. Soil moisture shortage is apparent from the wilting at midday. On manured corn land in 246 winter rye is badly affected.

All corn was harrowed on the 27th and 28th.
Maximum temperature 97, minimum 36; precipitation .39 inch.

## Cooperative Grazing Experiment

Very little improvement has occurred in the pastures during the past week. Unless a good rain comes shortly, the brome-grass, 30-acre and 50-acre steers, will have to be removed to the reserve pasture.

Several loads of rock have been hauled to riprap the dam in the reserve pasture.

## Horticulture

Tomatoes in the breeding experiment were planted in the field on May 27 and 28. A shower on the previous day had put the ground in good condition for such planting.

Sweet corn and various vegetables, planted in the garden and breeding experiment, are now coming up, and it appears that good stands have been obtained.

Geraniums, cannas, and other flowers, have been taken from the greenhouse, and set out in the flower beds of the grounds.

Mandan, continued:

Apple, gooseberry and currant seeds from last year's crosses have germinated very well, while plum and cherry seeds are not starting as well as the apple. These small seedlings will soon be ready to transplant. Good stands have been obtained from wild plum and sandcherry seed planted last fall.

All orchards have received their first cultivation of the season.

Arboriculture

All caragana hedges and roadways were cultivated, and also the ash seedlings. Hoeing was commenced in the nursery. All dead wood was removed from the main windbreak. Fruit planting reports for the summer's inspection were made out and the final list of applications for Demonstration Shelterbelts in 1926 were acknowledged and filed.

Visitors for the week included Messrs. E. W. Vancura, County Agent, Fessenden, North Dakota. R. L. Webster, State Entomologist, and J. L. Coulter, President, North Dakota Agricultural College, R. B. Murphy, Chairman, North Dakota State Board of Administration. Numbers of farmers are visiting and inspecting the station every day.

BELLE FOURCHE:

The temperature during most of the week was low, but on the last two days high temperatures occurred. On the 30th a temperature of 94 was recorded. A rain of .36 inch fell on the 25th. This was the only precipitation during the week.

Spring grains have shown little indication of drought injury as yet, but the soil is beginning to crack badly and they cannot grow much more without rain. Winter rye has commenced to fire again and alfalfa has ceased growing and is beginning to kill back. Winter wheat is still in good condition, but on most plats it is not much further advanced than spring wheat.

Corn is up with a good stand on all plats. A few plants of potatoes came up the last part of the week. Usually potatoes take from three weeks to a month to come up, but this year the first plants appeared within two weeks after planting.

The total rainfall for May was 1.55 inches. This is .99 inch below the average. The deficiency for the year to date is 1.75 inches. The average temperature for May was 56 degrees. This has been exceeded in only one year since records have been kept here. The maximum temperature of 94 on May 25 has been exceeded only once during May in 18 years.

Maximum temperature 94, minimum 35; precipitation .36 inch. A light frost occurred on the 24th.

ARDMORE:

There has been no rain of any consequence during the last two weeks, and the weather has been unusually hot for this time of the year.

For the second time in the history of the station the indications are that alfalfa will be a complete failure. This crop has made almost no growth during the last three weeks, and now is only a few inches high. Tansy mustard (Sophia pinnata) has about taken many alfalfa fields in this section, and is very bad in some of the station fields. This weed was almost unknown in this section until a year ago.

All small grain crops are suffering for lack of moisture. Barley is just heading and is beginning to fire. Wheat and oats are not so far along, and are not so badly hurt, but will make very little growth from now on unless there is a good rain.

Corn is up and a good stand has been secured. Cane and millet seeding was completed during the week.

Steers, which were fed a maintenance ration during the winter, were turned to pasture on May 22. The feeding period was 196 days from November 4, 1924 to May 22, 1925, inclusive. The average gains per steer for the period were as follows:

| | |
|---|---|
| Wheat grass hay | 148.3 pounds |
| Silage and alfalfa hay | 177.7 " |
| Oat straw and alfalfa hay | 112.2 " |
| Alfalfa hay | 137.7 " |

Maximum temperature 93, minimum 40; precipitation .24 inch.

ARCHER:

The weather has been warm and partly cloudy with thunder showers passing at random over most of this section. The station received one shower of .07 inch and two of .19 inch each. This has been sufficient to somewhat help the winter wheat that was not seeded on fallow. That seeded on fallow has showed no signs of the lack of moisture. Other crops are doing well except the sunflowers and corn in the general field where the damage caused by the cut worms has necessitated considerable re-seeding.

Weeding, alley and road work is in progress as well as the preparation of potatoes, which the Extension Service sent to the station in order to secure information relative to certification work in this state.

Speaker of the House, Hon. J. C. Underwood, and County Agent Robert Zeiger visited the station May 25.

Maximum temperature 83, minimum 40; precipitation .45 inch.

AKRON: Week ending May 23, 1925.

The week has been characterized by unusually hot weather, the temperature being above 90 a number of days with a maximum of 98. Winter wheat here on the station and on farms adjoining is probably beyond recall. Only the late planted wheat, and the very thin wheat would seem to hold recuperative powers should rains in ample quantity fall. Here on the station winter wheat is too thin and short to hide the ground on most preparations. The head is in the boot. The fallow plats measure 14 inches, while the wheat on most other preparations stands from 3 to 4 inches high. Spring sown small grains are at a standstill and are very weedy, but the grain is not yet burning. In contrast to the weedy condition of the spring sown small grains on the rotation block, are the two barley fields on the sheep rotation project where hardly a weed can be found.

About all the forestry trees are in leaf. The honey locusts are breaking into leaf for the second time, having been frozen off earlier in the spring. Russian mulberty is just beginning to show life, and it appears that the above ground portion has suffered severe winter injury.

The first planting of forage varieties has emerged to good stands. The second planting is emerging but the stands are yet uneven. The rate and spacing corn is emerging, and other corn about the station is emerging. It does not now appear that the cut worm will injure the corn stands. However, two applications of poison bran have been made to all corn ground.

The rotation corn plats were seeded the 18th, and the variety corn on the 19th and 20th. Three acres of silage corn were seeded on the 20th and 21st. The fallow plats were disked for the second time this spring previous to the average plowing date, which is June 3.

Swadley corn selections A-10, and A-22 were planted for increase. Last season's forage variety strip was plowed and packed for fallow. The roadways were duck-foot cultivated. Six acres of flax on old ground were seeded for the State College. Some cultivation was done among the forestry planting, and some time spent on station fencing project.

Professor Morton, head of the Animal Husbandry Department, and Mr. Maynard, in Charge of Animal Investigations, from the State Agricultural College, spent Thursday and Friday here in the interest of future live stock development.

Maximum temperature 98, minimum 40; precipitation 0.

AKRON:

Early in the week .51 of an inch of rain fell which was followed by showers and cool weather the remainder of the week. Winter wheat has revived markedly where not too badly burned. Fallow, thin wheat, and wheat late planted and not taken by the cut worms, give promise of fair yields if timely rains fall between now and harvest.

Akron, continued:

Sweet clover seeded on the various projects has not emerged except on Rotations 31 and 32. This tends to show that a nurse crop may be very desirable in the early growth of the sweet clover, and the stand might be saved by clipping the nurse crop at the jointing stage and preventing seed formation.

Corn is emerging and the promise now is for satisfactory stands. The cut worm does not now appear to be a factor. Ground squirrels have not been as big a factor as is usually the case.

The rotation sorgo and kafir plats were seeded, the plats plowed and packed where spring plowing was the order.

The station roads were duck-foot cultivated and dragged, and the winter wheat remaining hoed off. Other work has been station fencing, and odd jobs about the buildings.

Mr. J. T. Sarvis, Agronomist at the Mandan Station, is here this week end.

Maximum temperature 88, minimum 45; precipitation .67 inch.

NORTH PLATTE:

Only one light shower with .11 inch of rain occurred during the week. The condition of all small grain is becoming critical from lack of moisture. The condition has been intensified by continued high winds.

First crop of alfalfa is being put up on the station. On account of severe injury by freezing the last of April the crop is the lightest secured for a number of years. Good fields on the station are not cutting more than 1/2 ton per acre.

A delegation of farmers from Dawson County, under the leadership of the County Agricultural Agent, visited the station on May 26. There were 87 cars and the average round trip distance was about 130 miles, so that the aggregate mileage traveled was over 11,000 miles.

COLBY:

Two rains, each of approximately one-half inch, which fell during the middle of the week, have helped the wheat prospect and the corn to a very appreciable degree. Wheat is just about fully headed. Barley is also just headed. Oats are just starting to head and spring wheat is not showing heads as yet on the project. Some of the earlier varieties of spring wheat are showing heads, however. Corn shows a good stand, in fact practically every kernel came. No thinning of corn has been done yet.

Colby, continued:

In the northwest part of the county hail accompanied one of the rains of the week. The hail did local damage to almost a total loss for winter wheat where it was the worst. Very few small hail stones fell on the station, not enough to do any damage whatever.

Winter wheat and barley varieties look especially good. Spring wheat and oats varieties are not far enough advanced to tell anything concerning their prospects yet.

Seeding of sorghums has not started on the station yet. They will, unless other rain comes, all be seeded the coming week. With the moisture that we have now good germination is expected. Several commercial fields that were planted previous to the last two rains will not show any stand. In fact most all of the sorghums planted previous to this date will show a poor stand.

Some field work of a miscellaneous nature was done during the week, this consisting of spring-tooth harrowing the orchard, and a small field, leveling of the roads on the D. L. A. Project, cultivating alleys, and some plowing. Other work consisted of salting some bindweed areas along the road and laying cement walks for the new residence.

The largest number of inquiries that we have had on any one subject this spring has been for dairy cattle, for calves, and for feeds for feeding them.

HAYS:

The past week was one of varying temperatures ranging from 43 to 101 by the thermometers located on the Dry Land plats. Generally it has been hot and several days of high wind, though only one day of hot wind. A few times rain came near but only .05 inch was recorded at this place.

Crops have suffered extremely from drought, and winter wheat is also suffering from continued work of fly. A second brood of adult flies are now out and in some fields are very numerous. One can hardly pull a plant without finding many eggs on the leaves. Professor McCulloch, of the Kansas State Agricultural College, who visited the station Friday, stated he has seldom seen the adult fly so numerous as he found them here.

Word during the week consisted largely of tillage work and soil moisture determinations.

GARDEN CITY:

Dry weather has continued throughout the past week and nearly all crops are showing the need of moisture. Wheat on fallow continues to look promising, but that on continuously cropped ground is practically gone. Fallow is showing up particularily well throughout this part of the state. Wheat that is needing moisture has a peculiar color resembling the color of barley more than wheat.

The planting of row crops was completed on the Dry Land project Friday. The second date of planting sorghum was made Saturday. All corn plats as well as the first date of sorghum have emerged to a good stand. A poor job of listing was accomplished on the lister planted plats due to a dry seed bed.

Professors S. C. Salmon and J. W. McColloch, of the Agricultural College, were station visitors this week.

TUCUMCARI:

Preparation of land for planting has progressed well the past week, but at the present time the soil is so dry it is questionable whether planting of the variety sorghum block should be done before rain falls. The June date of planting block is prepared and apparently this soil contains sufficient moisture to cause germination. This will be planted Monday, with favorable weather.

Stands on most rotation plats and M. C. plats are unusually good this year, although peanuts and cotton are not emerging satisfactorily. Due to less than 20 per cent of a stand, six May 1 date-of-planting plats were harrowed out and will be replanted to broomcorn. Stands on the May 15 dates are satisfactory.

Planting is progressing rapidly over much of the county, although in several localities insufficient rain has fallen to permit this. May showers have been local and doubtless the total for seven months has been less than three inches over most of the county. Some winter wheat may still produce a crop, although the abandoned acreage will be from 60% to 70% under the most favorable conditions. Ranges have improved temporarily, but a heavy, general rain is required on these, as well as on the crop land.
Maximum temperature 86, minimum 50; precipitation .22 inch.

BIG SPRING:

Weather during the past week has been somewhat cooler than that of the previous week. The soil had dried out so rapidly that there was some doubt about obtaining good stands on the cotton plats. This fear was alleviated last night when a slow rain of .85 inch fell. This should bring everything up to a good stand. Most of the grain sorghums and cowpeas were up to a good stand before the rain, but this will finish the job in good shape.

Big Spring, continued:

With the exception of three drilled plats, and the later dates of seeding, all station planting was completed this week. The increase fields of sumac and milo were planted during the last few days.

Maximum temperature 102, minimum 53; precipitation 1.07 inches.

LAWTON:

The first four days of the week were cool and mostly cloudy. During the latter part of the week temperatures were higher and brisk winds prevailed during the daylight hours.

Practically all of the row crops show good stands at the present time. A few of the listed kafir plats are yet weak in stand because of a lack of surface moisture. Corn is making considerable growth, especially where manure was applied. The first cutting of alfalfa was made during the week. Although the hay is of fair quality it is light in yield.

Oats are turning very rapidly and will be ready for harvest between June 1 and 5. The crop is not ripening normally. The plants are drying up and the grain will be very light. Indications are that wheat will mature much in the same manner.

Mr. T.R. Stanton, of the Cereal Office, visited the station on the 27th and 28th.

A rain of .18 inch fell on the night of the 30th.

Maximum temperature 91, Minimum 50.

WOODWARD:

The weather has remained hot and dry. Wheat is ripening rapidly and will be harvested within the next few days. If it fills well and does not shrivel, yields on the plats will probably vary from 5 to over 25 bushels. Late wheat will probably be cut short by lack of moisture.

The railroad has finally put in a crossing, so that the part of the dairy farm cut off by track can be reached without going an extra mile or so. This has also been graded so that it can be used.

Roads on the D. L. A. project have been disked, all fallows and fall plowed plats spring-toothed. Corn has been thinned and cultivated, and is making a nice growth. Scattering rye has been pulled out of the wheat plats and other wheat on the station. Grapes have been sprayed to control grape leaf hopper and grape root worm. Some Sudan grass has been planted for pasture on the dairy farm.

Maximum temperature 88, minimum 47; precipitation .05 inch. Total precipitation for May, 1.34 inches. Evaporation 2.039 inches. Average hourly wind velocity 6.3 miles.